

CLAIMS

What is claimed is:

1. A wireless transmit/receive unit (WTRU) comprising:
 - a plurality of receivers for processing wireless communication signals for producing respective versions of a wireless communication intended for reception by the WTRU;
 - an interface coupled to the receivers configured to combine respective versions of a wireless communication and produce a combined version of the wireless communication;
 - a selectively controllable power supply unit for powering each of the receivers; and
 - a control unit coupled with the receivers, the interface and the power supply unit and configured to monitor predetermined parameters to thereby selectively control the powering of the receivers based on predetermined thresholds such that selected receivers are not powered under predetermined conditions when it is desirable to limit energy consumption.
2. The invention according to claim 1 wherein the interface includes received signal power monitoring circuitry configured to output a received signal power indication and the control unit is configured to utilize a predetermined received signal power level as one threshold for controlling the powering of the receivers such that at least one receiver is not powered when the received signal power indication output by the interface exceeds the received signal power level threshold.
3. The invention according to claim 2 wherein the interface includes received signal Quality of Service (QoS) monitoring circuitry configured to output a received signal QoS indication and the control unit is configured to utilize a predetermined received signal QoS level as one threshold for controlling the

powering of the receivers such that at least one receiver is not powered when the QoS indication output by the interface exceeds the received signal QoS level threshold.

4. The invention according to claim 3 wherein the control unit is configured to utilize a predetermined combination of received signal power level and received signal QoS level as one threshold for controlling the powering of the receivers such that at least one receiver is not powered when the combination of the received signal power and QoS indications output by the interface exceeds the received signal combination threshold.

5. The invention according to claim 1 wherein the interface includes received signal Quality of Service (QoS) monitoring circuitry configured to output a received signal QoS indication and the control unit is configured to utilize a predetermined received signal QoS level as one threshold for controlling the powering of the receivers such that at least one receiver is not powered when the QoS indication output by the interface exceeds the received signal QoS level threshold.

6. The invention according to claim 1 wherein the power supply unit is adapted for one or more batteries and includes a battery charge monitoring device configured to output a battery charge indication and the control unit is configured to utilize a predetermined charge level as one threshold for controlling the powering of the receivers such that at least one receiver is not powered when the charge indication output by the power supply unit falls below the charge level threshold.

7. The invention according to claim 6 wherein the power supply unit includes a battery.

8. The invention according to claim 6 wherein the power supply unit includes a line-in power input and is configured to output an override signal when power is supplied via the line-in input and the control unit is configured to maintain power to all receivers in response to receiving the override signal from the power supply unit.

9. The invention according to claim 1 wherein the WTRU has a primary receiver that is powered in a manner not controlled by the control unit and a secondary receiver that is powered in a manner controlled by the control unit.

10. The invention according to claim 1 wherein the WTRU is configured as a mobile unit for use in a Code Division Multiple Access (CDMA) wireless communication system.

11. The invention according to claim 1 wherein the control unit and the interface are implemented on an application specific integrated circuit (ASIC).

12. In a wireless transmit/receive unit (WTRU) having a plurality of receivers for processing wireless communication signals for producing respective versions of a wireless communication intended for reception by the WTRU, an interface coupled to the receivers configured to combine respective versions of a wireless communication and produce a combined version of the wireless communication and a power supply unit for powering each of the receivers, a power conservation method comprising:

using the interface and the power supply unit to monitor predetermined parameters; and

selectively controlling the powering of the receivers based on predetermined thresholds such that selected receivers are not powered under predetermined conditions when it is desirable to limit energy consumption.

13. The method according to claim 12 including monitoring received signal power and utilizing a predetermined received signal power level as one threshold for controlling the powering of the receivers such that at least one receiver is not powered when the monitored received signal power exceeds the received signal power level threshold.

14. The method according to claim 13 including monitoring received signal Quality of Service (QoS) and utilizing a predetermined received signal QoS level as one threshold for controlling the powering of the receivers such that at least one receiver is not powered when the monitored QoS exceeds the received signal QoS level threshold.

15. The method according to claim 14 including utilizing a predetermined combination of received signal power level and received signal QoS level as one threshold for controlling the powering of the receivers such that at least one receiver is not powered when the combination of the monitored received signal power and QoS exceeds the received signal combination threshold.

16. The method according to claim 12 including monitoring received signal Quality of Service (QoS) and utilizing a predetermined received signal QoS level as one threshold for controlling the powering of the receivers such that at least one receiver is not powered when the monitored QoS exceeds the received signal QoS level threshold.

17. The method according to claim 12, wherein the power supply unit is adapted for one or more batteries, including monitoring battery charge and utilizing a predetermined charge level as one threshold for controlling the powering of the

receivers such that at least one receiver is not powered when the monitored battery charge falls below the charge level threshold.

18. The method according to claim 17, wherein the power supply unit includes a line-in power input, further comprising generating an override signal when power is supplied via the line-in input and maintaining power to all receivers in response to the override signal generation.

19. The method according to claim 12 wherein the WTRU has a primary receiver and a secondary receiver, further comprising maintaining the powering of the primary receiver irrespective of predetermined thresholds and selectively controlling the powering of the secondary receiver based on the predetermined thresholds such that the secondary receiver is not powered under predetermined conditions when it is desirable to limit energy consumption.

20. The method according to claim 12, wherein the WTRU is a mobile unit, further comprising using the WTRU for wireless communication in a Code Division Multiple Access (CDMA) wireless communication system.